

CLAIMS

- Sub A2
1. An image reading device comprising:
- an imaging device that has photo-diodes and color filters provided on said imaging device, said color filter having color filter elements of a plurality of colors, said photo-diodes generating an original image data containing pixel data, each of which corresponds to one of said colors which are arranged in a predetermined distribution;
- 5 a reading processor that reads said pixel data from said imaging device;
- 10 a thinning processor that thins out some of said pixel data to generate a thinned image data, colors of which are arranged in said predetermined distribution; and
- an interpolation processor that performs an interpolation process on said thinned image data to generate an interpolated image data for each of said colors.
- 15 2. A device according to claim 1, wherein said colors of said original image data are arranged in such a manner that a (m x m) matrix, formed by said plurality of colors, is repeated, and
- 20 said thinning processor thins out (m x (n-1)) number of pixel data for every (m x (n-1)+1) number of pixel data in a horizontal direction and a vertical direction of an image corresponding to said original image data, wherein each of "m" and "n" is a positive integer greater than 1.
- 25 3. A device according to claim 2, wherein said colors of

said original image data are arranged in such a manner that a (2 x 2) matrix, formed by said plurality of colors, is repeated, and said thinning processor thins out (2 x (n-1)) number of pixel data for every (2 x (n-1)+1) number of pixel data in a horizontal direction and a vertical direction of an image corresponding to said original image data.

4. A device according to claim 3, wherein said thinning processor thins out 2 pixel data for every 3 pixel data.

5. A device according to claim 3, wherein said thinning processor thins out 4 pixel data for every 5 pixel data.

6. A device according to one of claims 4 and 5, wherein said colors of said color filter elements are arranged in the Bayer arrangement.

7. A device according to one of claims 4 and 5, wherein said color filter has red filter elements, green filter elements and blue filter elements, and in said (2 x 2) matrix, said green filter elements are positioned on a diagonal line, and said red filter element and said blue filter element are positioned on another diagonal line.

8. A device according to claim 3, further comprising a reduction ratio setting processor that sets a reduction ratio in accordance with which the number of pixel data thinned out by said thinning processor is determined.

9. A device according to claim 1, further comprising a reduced image indicating processor that forms a color image based

on said interpolated image data and indicates said color image.

10. An image reading device in which pixel data of a first image, formed on an imaging device having an on-chip color filter of a plurality of colors, are point-sequentially read from said imaging device and subjected to an interpolation process to generate components of said plurality of colors for each of said pixel data to obtain a second image, said image reading device comprising:

10 a thinning processor that thins out some of said pixel data before said pixel data are subjected to said interpolation process, so that said second image is composed of a smaller number of pixels than said first image.